WHAT IS CLAIMED IS:

1. An image processing apparatus comprising:

first converting means for generating conversion coefficients of M values by converting input image data by a first system;

second converting means for generating conversion coefficients of N values (M > N) by converting the input image data by a second system;

input means for selectively inputting said conversion coefficients of said M values or said conversion coefficients of said N values; and

output means for outputting first information showing a position where a significant conversion coefficient exists in a block constructed by either ones of said conversion coefficients inputted by said input means and second information showing said significant conversion coefficient.

2. An apparatus according to claim 1, further comprising entropy encoding means for mixedly entropy encoding the first information and the second information outputted from said output means.

3. An apparatus according to claim 1, further comprising discriminating means for discriminating whether the input image data should be converted by said first converting means or should be converted by

said second converting means and for allowing said first or second converting means to selectively supply said input image data.

5   4.   An apparatus according to claim 1, wherein said first converting means executes a wavelet conversion.

5.   An apparatus according to claim 1, wherein said second converting means executes a prediction encoding.

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6.   An apparatus according to claim 1, wherein said output means compares a predetermined threshold value with each conversion coefficient in said block, thereby deciding the significant conversion coefficient.

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7.   An apparatus according to claim 1, wherein said significant conversion coefficient has a value within a range of a predetermined threshold value.

20   8.   An apparatus according to claim 7, wherein a lower limit value of said threshold value has been predetermined.

9.   An apparatus according to claim 4, wherein an
25   output of said output means is executed every different frequency band which is obtained by performing said wavelet conversion.

10. An apparatus according to claim 1, wherein after the first information and the second information which can decode an image of a low resolution were outputted, said output means outputs the first information and the second information which can decode an image of a high resolution.

11. An image processing method comprising:

a first converting step of generating conversion coefficients of M values by converting input image data by a first system;

a second converting step of generating conversion coefficients of N values (M > N) by converting the input image data by a second system;

an inputting step of selectively inputting said conversion coefficients of said M values or said conversion coefficients of said N values; and

an outputting step of outputting first information showing a position where a significant conversion coefficient exists in a block constructed by either ones of said conversion coefficients inputted by said inputting step and second information showing said significant conversion coefficient.

12. A storing medium in which an image processing program has been stored in a state where said program can be read out from a computer, wherein said image

processing program comprises:

a first converting step of generating conversion coefficients of M values by converting input image data by a first system;

5   a second converting step of generating conversion coefficients of N values (M > N) by converting the input image data by a second system;

an inputting step of selectively inputting said conversion coefficients of said M values or said

10   conversion coefficients of said N values; and

an outputting step of outputting first information showing a position where a significant conversion coefficient exists in a block constructed by either ones of said conversion coefficients inputted by said

15   inputting step and second information showing said significant conversion coefficient.

13.   An image processing apparatus comprising:

output means for outputting division information

20   showing whether each of a plurality of blocks including an encoding subject block has further been divided into a plurality of blocks or not; and

entropy encoding means for entropy encoding the division information corresponding to said encoding

25   subject block on the basis of a presumption probability according to a division situation of a neighboring block of said encoding subject block.

14. An apparatus according to claim 13, wherein said entropy encoding is an arithmetic encoding.

15. An apparatus according to claim 13, wherein said output means includes dividing means for further dividing said encoding subject block into a plurality of blocks.

16. An apparatus according to claim 15, wherein said dividing means decides whether said encoding subject block is divided or not in accordance with a result of discrimination about whether a significant coefficient exists in said encoding subject block or not.

17. An apparatus according to claim 13, wherein said encoding subject block is constructed by a plurality of coefficients and each of said coefficients is a binary value.

18. An apparatus according to claim 13, wherein said encoding subject block is constructed by a plurality of coefficients and each of said coefficients is a multivalue.

19. An apparatus according to claim 13, wherein said encoding subject block is one of a plurality of

blocks obtained by dividing an initial block at least
one or more times.

20. An apparatus according to claim 19, wherein said
neighboring block is included in said initial block.

21. An apparatus according to claim 13, wherein
said plurality of blocks construct one of subbands
derived after completion of a wavelet conversion.

22. An image processing method comprising:
an outputting step of outputting division
information showing whether each of a plurality of
blocks including an encoding subject block has further
been divided into a plurality of blocks or not; and
an entropy encoding step of entropy encoding the
division information corresponding to said encoding
subject block on the basis of a presumption probability
according to a division situation of a neighboring
block of said encoding subject block.

23. A storing medium in which an image processing
program has been stored in a state where said program
can be read out from a computer, wherein said image
processing program comprises:
an outputting step of outputting division
information showing whether each of a plurality of

blocks including an encoding subject block has further

been divided into a plurality of blocks or not; and

an entropy encoding step of entropy encoding the

division information corresponding to said encoding

5   subject block on the basis of a presumption probability

according to a division situation of a neighboring

block of said encoding subject block.